



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Masaaki OZAWA et al.

Group Art Unit: 1711

Application No.: 10/616,965

Examiner: J. MULLIS

Filed: July 11, 2003

Docket No.: 116515

For: PROCESS FOR PRODUCING SPHERICAL COMPOSITE CURED MELAMINE
RESIN PARTICLES

DECLARATION UNDER 37 C.F.R. §1.132

I, Masaaki OZAWA, a citizen of Japan, hereby declare and state:

1. I completed a course of study in the postgraduate program in Industrial Chemistry at the Department of Engineering, Kanazawa University, Japan in 1993.
2. I have been employed by Nissan Chemical Industries, Ltd. since 1997 and I have had a total of 8 years of work and research experience in specialty chemicals. Most recently, I have had a total of 5 years of work and research experience in polymers.
3. I am a named co-inventor in the above-identified application.
4. I and/or those under my direct supervision and control have conducted an experiment to replicate the first phase (all steps preceding the second introduction of acid) of Example 6 of U.S. Patent No. 3,84,453 to Erneta ("Erneta"), and to compare particles present in the product of that first phase to particles of known size.
5. My experiment was conducted as follows:

Part One (synthesis and preparation of products from the first phase (all steps preceding the second introduction of acid) of Example 6 of Erneta).

A 2 L reaction flask equipped with a mechanical stirrer, a reflux condenser and a thermometer was charged with 100 g of melamine, 167 g of 37% formalin, 30.8 g of an aqueous solution of sodium silicate (SiO_2 concentration: 29.2 wt %; molar ratio of $\text{SiO}_2/\text{Na}_2\text{O}$: 3.15) and 536 g of water. 10 wt % sulfuric acid was added to adjust the pH of the mixture to 8.0. The temperature of the mixture was then raised to 50°C while stirring. The temperature was maintained at 50°C for two hours.

The product of the above reaction was cooled and sprayed onto a carbon-coated collodion film supported by a Cu grid to form a dry film. The dry film was observed using transmission electron microscopy. A TEM micrograph (200K X) of the dry film is shown in FIG. 1.

Part Two (preparation of particle of known size).

A suspension of colloidal silica having an average particle size of 4 to 6 nm (SNOWTEX ST-XS by Nissan Chemical Industries, Ltd., Tokyo, Japan) was obtained. A specifications sheet showing the properties (including particle size) of SNOWTEX ST-XS is attached hereto as Exhibit A. The suspension of colloidal silica was sprayed onto a carbon-coated collodion film supported by a Cu grid to form a dry film. The dry film was observed using transmission electron microscopy. A TEM micrograph (200K X) of the dry film is shown in FIG. 2.

6. As is evident from TEM micrographs shown in FIGS. 1 and 2, at the conclusion of first phase (all steps preceding the second introduction of acid) of Example 6 of Erneta, the reaction product does not include any particles having a particle size of more than 4 nm.

7. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: August 8, 2005

Masaaki Ozawa
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